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AUTHOR Davidoff, Stephen H.
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ABSTRACT

This technical report updates the Chapter 1 Evaluation and Reporting System (CHIERS) used by the Philadelphia (Pennsylvania) School District to gather and report student information related to compensatory education programs funded under Chapter 1 of the Education Consolidation and Improvement Act of 1981, with information about 1988-89 projects. CHIERS includes information on school location, achievement test scores, and services received. The following findings are reported: (1) reading or mathematics projects provided 119,165 services to over 53,000 students; (2) the students who received services were nearly as stable as the larger school population; (3) there were only minor differences in the effectiveness of most reading projects as measured by achievement test scores, with the exception of three projects; (4) there were only minor differences in the effectiveness of mathematics programs as measured by achievement test scores, with the exception of one project; and (5) a low student-teacher ratio (20-1 or less) appears to improve program effectiveness. Statistical data are presented in five tables and four graphs. (FMW)

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The School District of Philadelphia

Chapter 1

Evaluation & Reporting System

1989 Update

Technical Report

Report No. 9013

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Office of Accountability and Assessment

Chapter 1

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Office of Assessment

Report Prepared By

Dr. Stephen H. Davidoff, Director
Educational Programs Research Unit

CHAPTER 1 EVALUATION AND REPORTING SYSTEM (CHIERS)
1989 UPDATE

Introduction

The Chapter 1 Evaluation and Reporting System (CHIERS) is an annually updated system for gathering and reporting pupil information regarding the ECIA Chapter 1 program in the Philadelphia School District. The data elements that are included in CHIERS are: school location, achievement test scores, and Chapter 1 services received.

The Data

School location information was collected through the Pupil Directory Information File three times (fall, winter, and spring) during the school year in order to keep track of pupils as they moved from school to school. Test scores were obtained from the City-Wide Testing Program computer files that were developed as a result of testing during the spring of 1988 and 1989.

During the spring of each year, Data Confirmation Lists are distributed to project staff, who indicate which students are being served in their Chapter 1 projects. Projects that make use of the computerized high school rostering system do not take part in this process because Chapter 1 service information on these students can be obtained through the centralized Roster File.

Additional data elements also are collected via the Data Confirmation Lists in order to examine project-specific questions. Attendance, informal reading inventory scores, and project specific mathematics test results are examples of data which are collected through CHIERS, but reported within the individual project evaluations.

The Analysis

Students who received Chapter 1 service during the 1988-1989 school year are included in the first three tables of this report. These tables describe the served group in terms of project participation, service area (reading or mathematics), and mobility. Those students who also had complete test information were included in the achievement analyses that are described in the remainder of the report.

When Chapter 1 evaluation systems were first proposed by the federal government, an evaluation model was prescribed as well. This model assumes that, in the absence of an educational intervention beyond the regular school program, children will maintain their Normal Curve Equivalent scores (NCE's are normalized National Percentile Ranks) from year to year. Thus, the evidence of a Chapter 1 effect above and beyond the effect of the regular school program is, by definition, a pretest to posttest improvement in the NCE. The percentage of students who meet this criterion is reported on a grade by grade basis for each project and for the Chapter 1 served group as a whole; and the improvement in the mean NCE is presented for each of the groups.

In summary, this model seeks to document an effect which is over and above what one would expect based on historical performance. While this might be true under ideal conditions, the reality of field evaluation prevents attributing the results to Chapter 1 alone (i.e., causal effect). Thus, overall School District improvement and/or its interaction with supplementary programs also serve to explain achievement.

The grade levels of the students being served and their initial achievement levels must be taken into consideration when examining achievement. Otherwise, comparisons between projects which serve dissimilar groups may be misleading. Totals are not presented because the variation in the grades served by the projects is great. The ordering of projects within tables and charts has been done to facilitate appropriate comparisons on a grade by grade basis.

Descriptive Information

Table 1 lists the various Chapter 1 projects, their service areas, and the number of students who were reported as participating in each. Students who received service from more than one project are counted in each of those projects. Across the projects that participate in CHIERS, 119,165 services were provided. As may be seen in Figure 1, more than 53,000 individuals were served in reading or mathematics projects. Thirty-nine point six percent received both reading and mathematics services, 50.6 percent received only reading service, and 9.8 percent received mathematics service only.

Mobility of the student population has often been cited as a reason for poor performance. This issue was examined by determining whether students were in different schools at the three different times during the school year that school location information was collected. A stability index was calculated by determining the proportion of pupils who did not change schools. This measure differs from the process usually used to calculate mobility - dividing the total number of admissions to and dismissals from a school by the enrollment on opening day. It is clear from the information in Figure 2 that the students who received Chapter 1 services were nearly as stable as the larger school district population (92.8% vs. 95.4%). These figures indicate that, because they have not move from school to school, most children served by Chapter 1 are likely to receive consistent services throughout the school year providing that they attended regularly.

Achievement Information

Across grade, baseline achievement information for reading and mathematics may be found in Table 2. The information consists of the typical grade range for each project, the number of students with both pretest and posttest scores, and the NCE's associated with the mean pretest scores. Grade by grade pretest-posttest information may be found in Tables 3a and 3b, for reading, and in Tables 4a and 4b, for mathematics.

Reading achievement. Tables 3a and 3b contain the detailed, grade by grade information for the Chapter 1 reading projects. These tables allow the reader to compare project performances on a grade by grade basis using either criterion. Table 3a comprises the grade 1-6 elementary school projects, while Table 3b includes information for projects that serve students in grades 7 through 12. It should be noted that the percentages and NCE gains vary considerably from grade to grade. Because of this variation, which may be related to characteristics of the test, achievement comparisons should be done within a grade rather than across grades. It is interesting to note that in most instances there are only minor differences among the various projects in terms of both criteria, the percentage of students with higher posttest NCEs and the change in the NCEs of the average. For reading, the percentages of students who achieved higher posttest NCE's showed little variation about the average percentage. Similarly there were only small differences in the mean NCE gains. Exceptions to this finding were that Schoolwide Projects (except grade 3) Satellite Centers (except grade 6), and Benchmark had results that were noticeably above the averages on one or both criteria. Projects providing services for the secondary grade levels were less successful than those providing services in the elementary grades. (See Tables 3a, 3b and Figure 3).

Mathematics achievement. Mathematics achievement data are presented in Table 4a (grades 1-6) and Table 4b (grades 7-11). An examination of Table 4a shows that there are only minor differences among the mathematics projects in terms of both criteria, percentage of student success and change in the NCEs of the average. Elementary Mathematics Resource Teachers (EMRT), Option 4 Mathematics, Schoolwide Projects and Benchmark had results that were above average on one or both of the criteria. With the exception of NCE gain in grade 5, Benchmark was found to be consistently superior to the other Chapter 1 projects that operated at the same grade level in terms of both the percentage of pupils who improved from pretest to posttest and the change in NCE from pretest to posttest. Projects serving the upper secondary grades showed lower NCE gains and lower success rates than those serving grades 1-6.

Conclusions

By examining the projects' relative performance on a grade by grade basis, it appeared that those projects that provided very intensive services tended to be more effective than those that provided less concentrated services. Option 4 (mathematics-elementary level), EMRT, Satellite Centers A, Benchmark and Schoolwide projects are projects that were judged to be more effective. Many of these provided a pupil:adult ratio of 20 or less.

The discovery that some projects are more effective than others is relatively new for the Chapter 1 Evaluation and Reporting System and was first reported in 1986-1987. Prior CHIERS updates have indicated that there were no important differences among projects. The information presented in 1987-1988 CHIERS confirmed the 1986-1987 school year findings for Benchmark (reading and mathematics), Elementary Mathematics Resource Teachers, and Option 4 Mathematics. Findings for Option 4 Reading and the Junior High/Middle School Mathematics Project were not

replicated. The information presented in the current document (1989 Update) is congruent with both the initial findings (1987 Update) and the replicated findings (1988 Update). Please see Table 5. With respect to the Schoolwide Projects, the initial findings, while encouraging, must be viewed as tentative until confirmed in future evaluation cycles.

TABLE 1

CHAPTER 1 SERVICE COUNTS 1988-1989

Project	Count	Area
District Reading	23,996	Reading
ESOL Option 4	2,424	Reading
ESOL (Other)	315	Reading
Option 4 Reading	3,740	Reading
Option 4 Mathematics	3,392	Mathematics
Schoolwide Projects	15,882	Both
Satellite C	861	Reading
Benchmark	624	Both
Project Success - Bilingual Options	113	Both
Project Success - Best Elements	3,407	Both
EWA	1,109	Reading
EMRT	3,696	Mathematics
Jr./Middle Mathematics	2,221	Mathematics
Mission: Excellence Reading	1,191	Reading
Mission: Excellence Mathematics	447	Mathematics
School Community Coordinator	51,475	N/A
Satellite D (Prescription Labs)	1,050	Reading
Prescription Labs - Mathematics	57	Mathematics
SWP (Science, Social Studies, Social Service)	1,277	Support Services
Social Service Referrals	599	Support Services
Middle School Ungraded (At Risk)	1,298	Both
Total Services	119,165	

TABLE 2

MEAN PRETEST SCORES, GRADE LEVELS, AND NUMBER OF STUDENTS IN THE ANALYSIS

Project	Grade Range	Reading Data Number	Reading Data NCE	Mathematics Data Number	Mathematics Data NCE
Dist. Reading	1-12	15,644	32.53		
ESOL OPTION 4	1-11	1,117	21.78		
Other ESOL	1-4	203	23.73		
Option 4	1-12	2,517	32.97	2,020	34.89
Schoolwide Projects	1-8	9,807	31.28	7,188	31.18
Benchmark	3-6	538	31.65	544	31.22
Bilingual Options	1-2	73	27.29	73	33.25
Best Elements	1-4	2,382	31.28	2,381	37.07
EMRT	1-8			2,687	31.82
Secondary Math	5-10			1,221	36.05
Mission: Excellence	6-12	452	30.05	120	38.18
Sattelite Centers	3-6	668	32.35		
Satellite D:					
Prescription Learning	3-9	795	35.20	45	45.78
Middle Schools Ungraded	5-8	603	30.58	618	33.39

Individual Chapter 1 Services in Reading and Mathematics 1988-1989

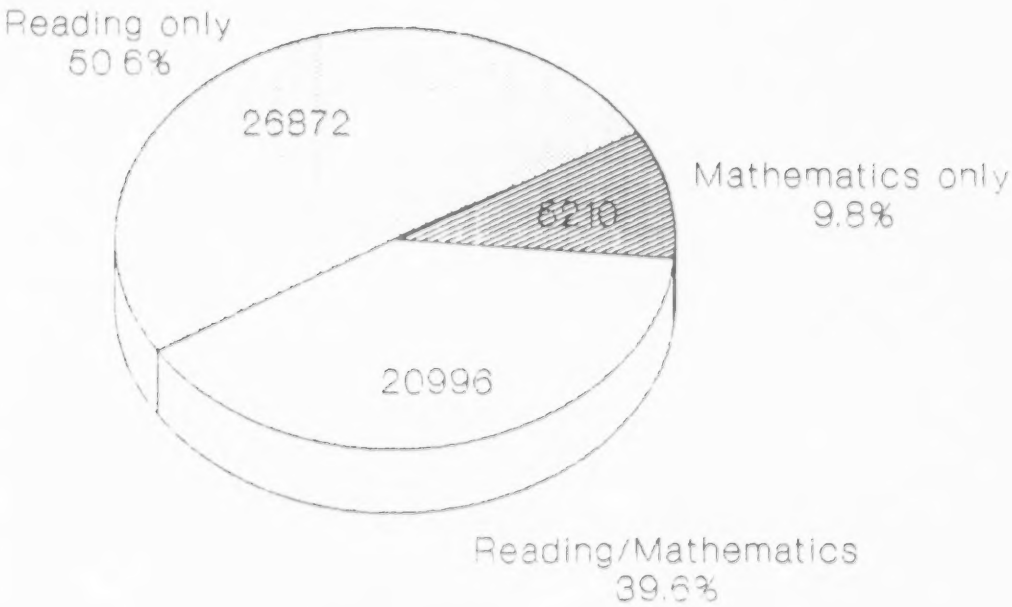


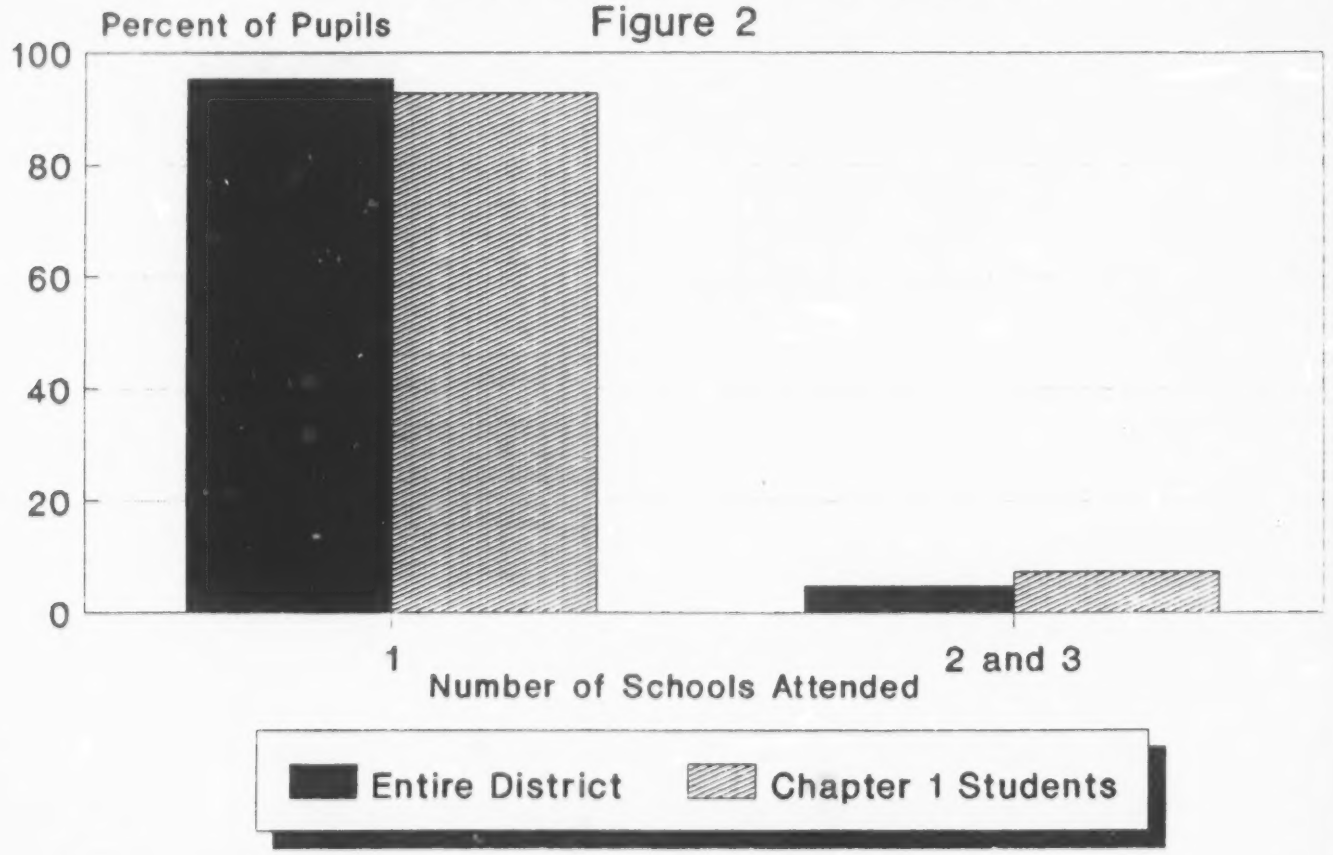
Figure 1

Source: CHIERS 1988-89 unduplicated service counts.

Pupil Stability 1988 - 1989

Districtwide vs. Chapter 1

Figure 2



Stability Index = the proportion who do not change schools.

Table 3a

A Comparison of Reading Projects' Achievement in Grades 1 - 6

Project	Criterion	Grade 1	2	3	4	5	6
ESOL OPTION 4	% Greater NCE	62.88	46.71	64.44	61.46	51.94	45.45
ESOL(OTHER)	% Greater NCE	69.01	52.00	61.53	73.52		
PROJECT SUCCESS: BILINGUAL OPTIONS	% Greater NCE	65.71	52.63				
DISTRICT READING PROJECT	% Greater NCE	63.60	47.54	66.38	59.15	48.31	35.90
OPTION 4 READING	% Greater NCE	53.01	46.68	66.60	59.59	47.07	29.80
SCHOOLWIDE PROJECTS	% Greater NCE	64.70	49.89	62.27	58.18	55.91	38.35
PROJECT SUCCESS: BEST ELEMENTS	% Greater NCE	56.65	44.92	66.31	53.05		
SATELLITE CENTERS	% Greater NCE			66.86	59.25	56.34	36.66
PRESCRIPTION LABS(SATELLITE CENTER D)	% Greater NCE			58.06	55.73	39.90	32.50
BENCHMARK	% Greater NCE			82.75	69.42	51.96	55.55
MISSION EXCELLENCE	% Greater NCE						26.66
MIDDLE SCHOOL UNGRADED(AT RISK)	% Greater NCE					45.28	33.81
ALL READING SERVICES COMBINED	% Greater NCE	62.63	47.76	64.72	58.68	50.76	37.23
ESOL OPTION 4	Change in NCE	8.49	0.27	5.40	4.56	0.69	-1.03
ESOL(OTHER)	Change in NCE	8.85	4.18	5.05	11.44		
PROJECT SUCCESS: BILINGUAL OPTIONS	Change in NCE	13.20	3.50				
DISTRICT READING PROJECT	Change in NCE	7.95	0.22	6.99	3.64	0.39	-2.36
OPTION 4 READING	Change in NCE	3.84	-1.21	7.29	3.51	-0.49	-4.32
SCHOOLWIDE PROJECTS	Change in NCE	9.12	1.26	5.89	3.65	1.97	-1.66
PROJECT SUCCESS: BEST ELEMENTS	Change in NCE	4.78	-1.05	5.50	2.13		
SATELLITE CENTERS	Change in NCE			7.81	3.70	3.91	-2.55
PRESCRIPTION LABS(SATELLITE CENTER D)	Change in NCE			5.13	3.35	-1.54	-3.57
BENCHMARK	Change in NCE			11.27	6.73	0.26	5.87
MISSION EXCELLENCE	Change in NCE						-7.66
MIDDLE SCHOOL UNGRADED(AT RISK)	Change in NCE					0.07	-4.06
ALL READING SERVICES COMBINED	Change in NCE	7.78	0.18	6.54	3.62	0.89	-2.04

N.B., ESOL type services are not included in the analyses of project effects because they served a specialized population

Table 3b

A Comparison of Reading Projects' Achievement in Grades 7 - 12

Project	Criterion	Grade 7	8	9	10	11	12
ESOL OPTION 4	% Greater	50.81	38.02	28.12	53.62	66.66	
SCHOOLWIDE PROJECTS	% Greater	56.92	42.85				
PRESCRIPTION LABS(SATELLITE D)	% Greater	64.63	33.89				
DISTRICT READING PROJECT	% Greater	53.64	44.63	41.62	44.00	42.70	39.65
OPTION 4 READING	% Greater	47.69	34.09	38.99	34.57	40.00	
MISSION: EXCELLENCE	% Greater	54.79	41.53	44.32	43.75	43.93	42.50
MIDDLE SCHOOL UNGRADED(AT RISK)	% Greater	57.80	45.96				
ALL READING SERVICES COMBINED	% Greater	53.97	42.97	39.50	41.42	43.80	39.33
ESOL OPTION 4	Change in NCE	3.04	-2.30	-5.79	5.71	8.73	
SCHOOLWIDE PROJECTS	Change in NCE	3.35	-0.41				
PRESCRIPTION LABS(SATELLITE D)	Change in NCE	5.06	-4.95				
DISTRICT READING PROJECT	Change in NCE	1.49	-2.02	-1.59	-1.20	-1.67	-2.85
OPTION 4	Change in NCE	0.14	-3.42	-2.56	-3.68	-3.54	
MISSION: EXCELLENCE	Change in NCE	2.11	-2.04	-0.94	-0.34	-0.84	-3.20
MIDDLE SCHOOL UNGRADED(AT RISK)	Change in NCE	1.46	-1.59				
ALL READING SERVICES COMBINED	Change in NCE	1.71	-2.17	-2.28	-1.26	-1.14	-3.70

N.B., ESOL type services are not included in the analyses of project effects because they served a specialized population

Table 4a

A Comparison of Mathematics Projects' Achievement in Grades 1 - 6

Project	Criterion	Grade 1	2	3	4	5	6
PROJECT SUCCESS: BILINGUAL OPTIONS	% Greater	75.00	48.64				
PROJECT SUCCESS: BEST ELEMENTS	% Greater	68.36	51.62	46.72	42.06		
SCHOOLWIDE PROJECTS	% Greater	78.43	61.52	60.93	52.83	57.70	72.27
OPTION 4 MATHEMATICS	% Greater	84.00	66.90	64.36	57.28	57.43	65.63
EMRT	% Greater	79.85	64.27	62.25	54.37	58.12	80.00
SECONDARY (JUNIOR/MIDDLE) MATHEMATICS	% Greater					45.51	60.40
BENCHMARK	% Greater			68.96	70.85	60.19	80.64
PRESCRIPTION LABS	% Greater	*	*	*	*	*	*
MIDDLE SCHOOL UNGRADED (AT RISK)	% Greater					49.12	51.18
ALL MATHEMATICS SERVICES COMBINED	% Greater	75.09	59.45	58.36	53.17	56.85	66.34
PROJECT SUCCESS: BILINGUAL OPTIONS	Change in NCE	13.86	1.90				
PROJECT SUCCESS: BEST ELEMENTS	Change in NCE	13.67	2.80	-1.48	-2.28		
SCHOOLWIDE PROJECTS	Change in NCE	19.23	10.34	5.95	4.61	6.97	14.24
OPTION 4 MATHEMATICS	Change in NCE	29.48	10.28	5.83	6.65	6.33	10.11
EMRT	Change in NCE	18.98	9.21	6.03	4.46	6.28	18.07
SECONDARY (JUNIOR/MIDDLE) MATHEMATICS	Change in NCE					0.82	7.81
BENCHMARK	Change in NCE			10.28	15.23	5.22	19.06
PRESCRIPTION LABS	Change in NCE	*	*	*	*	*	*
MIDDLE SCHOOL UNGRADED (AT RISK)	Change in NCE					-0.63	3.42
ALL MATHEMATICS SERVICES COMBINED	Change in NCE	17.28	8.17	4.33	4.42	5.91	10.79

* Insufficient data to conduct a meaningful analysis.

Table 4b

A Comparison of Mathematics Projects' Achievement in Grades 7 - 11

Project	Criterion	Grade 7	8	9	10	11	12
SCHOOLWIDE PROJECTS	% Greater	50.00	50.00				
EMRT	% Greater	54.54	*				
SECONDARY MATHEMATICS	% Greater	37.50	38.98	35.29	58.46		
OPTION 4 MATHEMATICS	% Greater	44.84	33.76	36.30	68.83		
MISSION: EXCELLENCE	% Greater	30.43	52.00	55.55	61.53		
MIDDLE SCHOOL UNGRADED (AT RISK)	% Greater	49.72	38.18				
ALL MATHEMATICS SERVICES COMBINED	% Greater	44.58	37.29	36.66	62.57	76.92	51.51
SCHOOLWIDE PROJECTS	Change in NCE	0.70	-2.97				
EMRT	Change in NCE	5.15	*				
SECONDARY MATHEMATICS	Change in NCE	-5.73	-3.98	-2.92	3.69		
OPTION 4 MATHEMATICS	Change in NCE	-3.11	-5.18	-3.77	6.58		
MISSION: EXCELLENCE	Change in NCE	-5.61	-0.88	4.44	4.92		
MIDDLE SCHOOL UNGRADED (AT RISK)	Change in NCE	-0.11	-3.42				
ALL MATHEMATICS SERVICES COMBINED	Change in NCE	-2.59	-4.34	-3.21	4.80	6.62	3.45

* Insufficient data to conduct a meaningful analysis.

Reading Achievement in Selected Chapter 1 Projects 1988-89

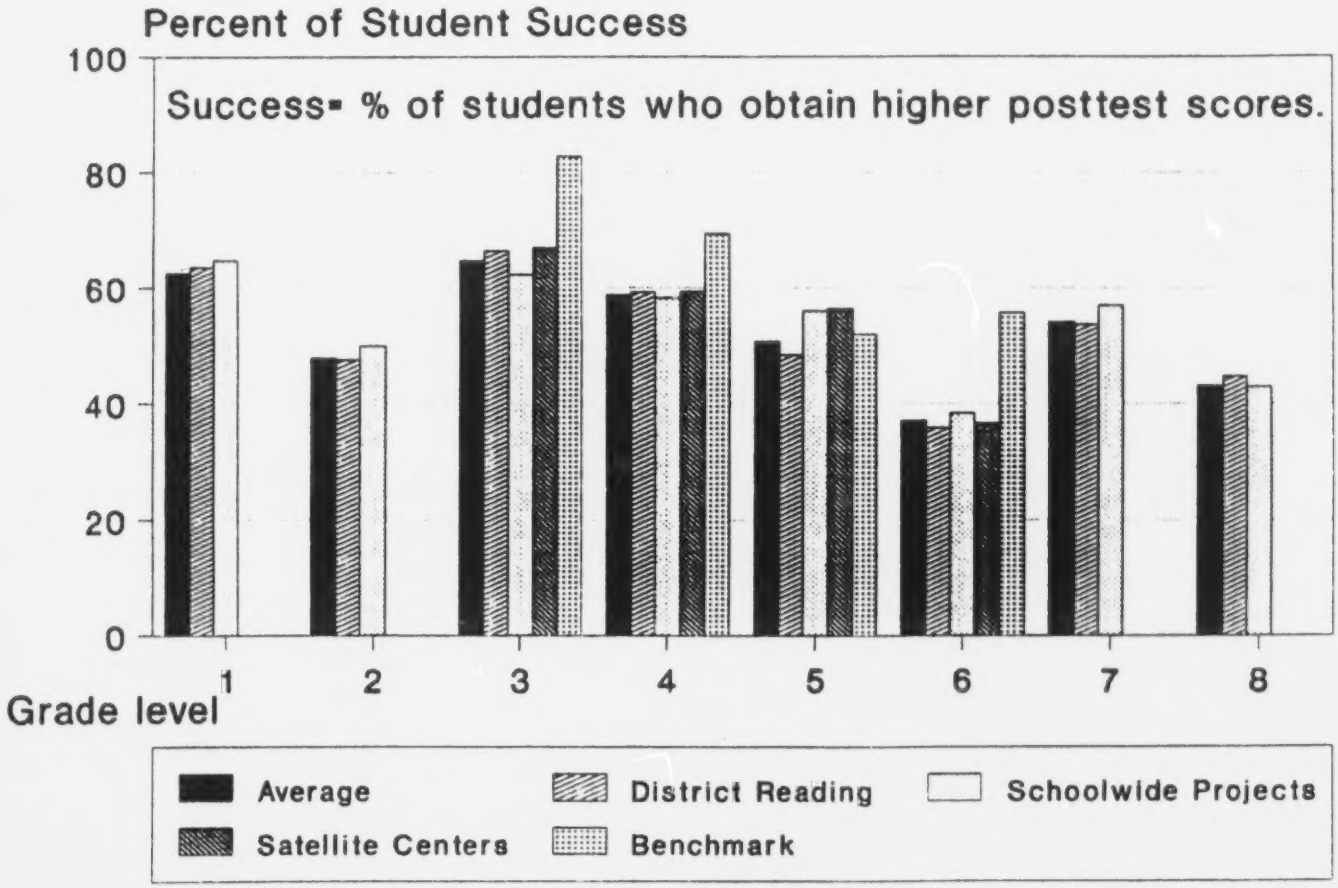


Figure 3

Mathematics Achievement Selected Chapter 1 Projects 1988-89

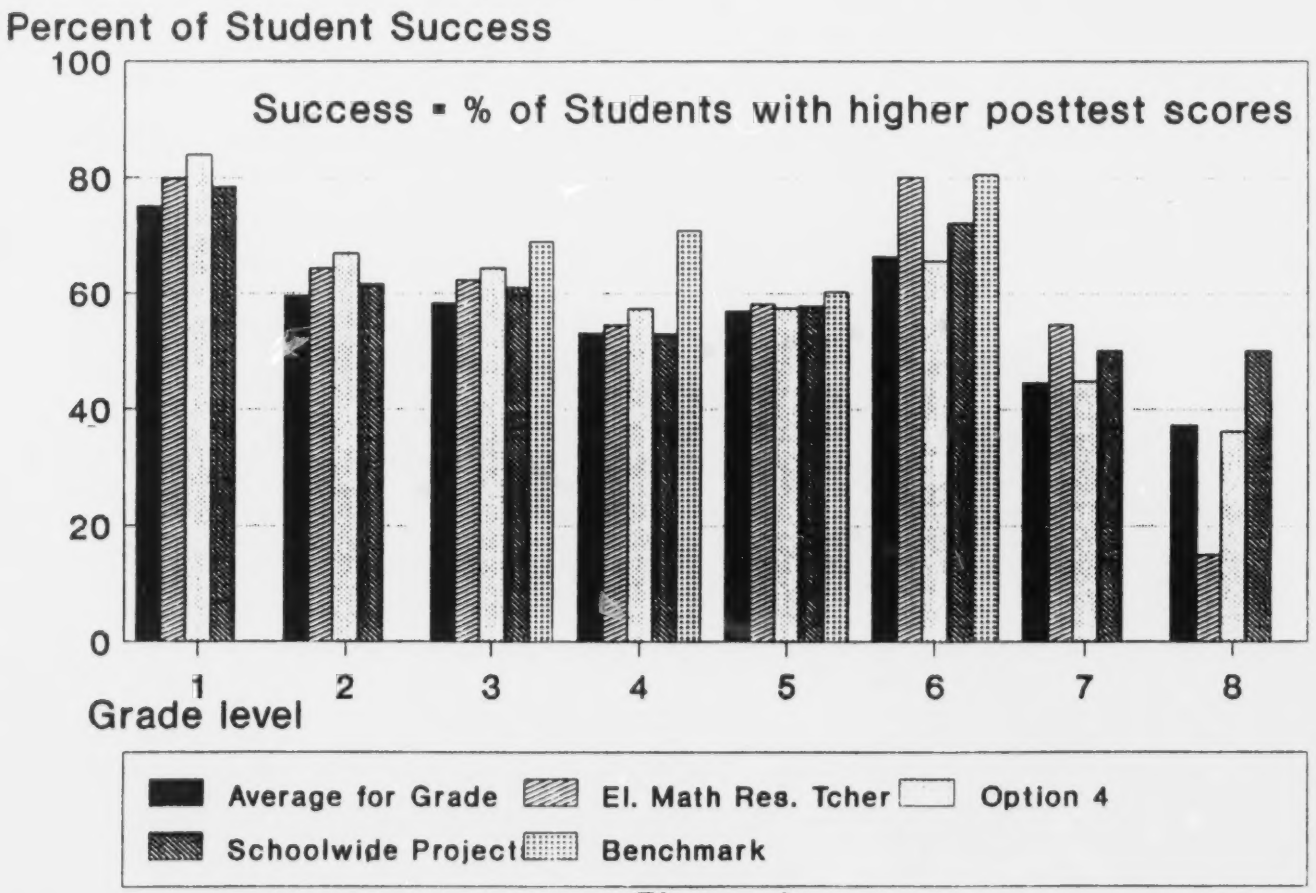


Figure 4

TABLE 5

REPLICATION OF CHIERS FINDINGS 1986 to 1989

Service	Projects	Number of Comparisons in 1988-89	Superiority to Average 1986-87	1987-88	1988-89	Findings Replicated
Reading	Benchmark	8	6	6	7	Yes
	Option 4(elem.)	12	11	5	3	No
	Satellite Centers	8	N/A	N/A	6	Pending
	Schoolwide Projects	16	N/A	N/A	12	Pending
Mathematics	Benchmark	8	4	6	7	Yes
	EMRT	16	16	16	14	Yes
	Option 4 (elem.)	12	11	11	10	Yes
	Schoolwide Projects	16	N/A	N/A	15	Pending

NOTE: (A) Comparisons were made for each project service on each criteria (1) size of average NCE gain (2) percent of pupils with positive NCE gains.

(B) N/A means that the data is either not available or not applicable due to a programmatic changes.

(C) Elementary means grades 1-6 in this analysis.